Fort Lewis Executive Summary

Five Year Plan:

Sustainability

Implementation Plan

Fort Lewis is committed to supporting a strong national defense, securing the integrity of our natural and cultural heritage, and conserving our natural resources for tomorrow's generations, while seeking choices that enhance our neighboring communities' ability to have a productive future.

Present environmental regulations have not protected the region sufficiently from increasing environmental, community, and economic concerns. While Fort Lewis complies with energy-related regulations, there are still pressing concerns for decreasing regional air quality, which Fort Lewis' emissions exacerbate. As air quality decreases, training may be compromised, as well as public health and soldier well-being. In addition, annual energy costs have fluctuated between $12.2 million to $20 million over the last ten years, diverting funds for mission-critical activities. It is apparent that compliance is not enough for dealing effectively either with environmental issues, or with the associated community, economic, and quality of life issues. Environmental compliance does not completely protect our long-term ability to provide clean air and water, energy, and other basic life-giving necessities in a cost-effective manner.

"We will either set this up now and work towards these goals…or I will set up my successors 10-15 years from now for a certain fall. We won't do that."

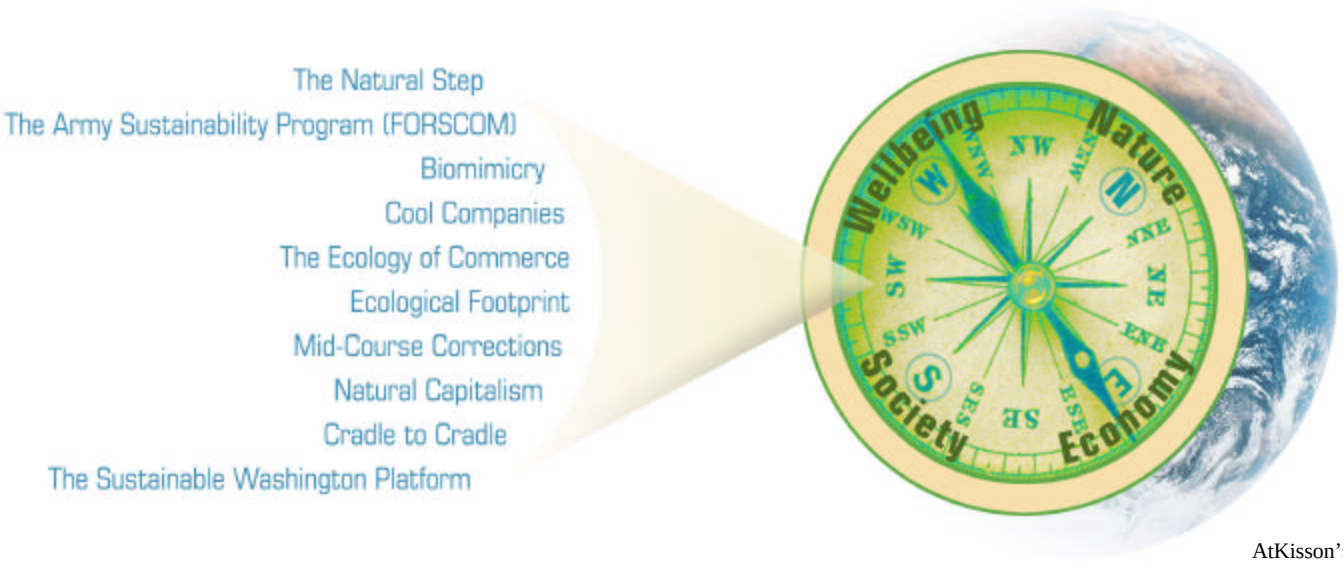
-LTG James T. Hill
Commanding General, I Corps, and Fort Lewis
Fort Lewis Sustainability Workshop,
7 Feb 02

Why Sustainability?

We need a new focus for installation management and "Sustainability" has been chosen, not only by Fort Lewis, but also by the greater Washington community. The goal of this new focus is a suitable quality of life for all people, today and many generations from now. Sustainable development means planning and managing our use of natural resources so as not to outstrip the ability of the Earth to provide those same resources to future generations. For the modern military installation, sustainability means proactively planning for the future to ensure the long-term viability of the mission. It means minimizing the use of non-renewable fuels, increasing energy efficiency, reducing water consumption, while saving money for mission critical uses. The sustainable installation provides superior quality of life for soldiers and their families, a clean and healthy environment, and promotes the general welfare of the surrounding community. Simply put, a sustainable installation is an enduring installation, well positioned to continue its proud record of service to the nation into the future.

Fort Lewis and the State of Washington

Located in the South Puget Sound, Fort Lewis makes decisions and conducts daily activities with environmental, regional, economic, and community implications. In reality, Fort Lewis is a city managed by the Department of Defense, grappling with the same issues as any other American city. In FY2003, Fort Lewis spent over $7.6 million on its environmental programs, with more than $5.7 million dedicated to maintaining compliance with environmental regulations. Further, Fort Lewis is responsible for local economic impact of $1.5 billion and is steward of 87,1476 acres in the Seattle/Tacoma area.



AtKisson's Inc.

Fort Lewis' Philosophy of Sustainability

Fort Lewis is committed to the support of a strong national defense, securing the integrity of our natural and cultural heritage, and conserving our natural resources for tomorrow's generations, without burdening our communities with the risks and costs of our choices, and without compromising their ability to have a productive future. Fort Lewis' vision for its sustainability is a combination of many different environmental philosophies; however, they contribute to a systems framework, which is a new approach for the Army in terms of environmental management. Fort Lewis chose to base their sustainability initiative on AtKisson Inc.'s compass, with the four planks of nature, economy, well-being, and society. By valuing these different aspects in installation management, Fort Lewis has been able to create a comprehensive systems-based 25-year plan, and specific proactive environmental goals.

Air Quality Significance:

Clean air is essential to providing healthy training areas and livable communities. Poor air quality can affect soldiers and families, both at home and at work. High amounts of ground-level ozone can irritate the lungs, causing respiratory problems. High concentrations of carbon monoxide (CO) and particulate matter (PM) can aggravate asthma, reduce lung capacity, and damage lungs.

GOAL: Reduce traffic congestion and air emissions 85% by 2025

Issue: Fort Lewis has a daily workforce of 29,100 military and civilian personnel. Assuming an average roundtrip commute of 20 miles/day for each employee, Fort Lewis workers travel 582,000 miles each day. This translates to an annual contribution of approximately 77,000 tons of CO_2, 200 tons of NO_X, and 3,700 tons of CO to the local air. These non-point source emissions exceed the emissions from the heat generation activities conducted on-site at Fort Lewis. In addition, to commute emissions, government tactical and non-tactical vehicles used on Fort Lewis generate additional emissions.

Major Tasks by 2007:

1. Alternate Fueling Station for Fort Lewis and surrounding community.
2. 25 Neighborhood Electric Vehicles (NEVs) for on-post use.
3. 50% GSA fleet will be Alternate Fueled Vehicles.
4. 45% reduction in Single Occupancy Vehicles and Vehicles Miles Traveled.
5. Implement the use of environmentally friendly obscurants and dust control where feasible.
6. Use the environmental versus financial life-cycle evaluation in decision-making process for all new project designs.
7. Use of water-based CARC paint on 90% of tactical vehicles and all miscellaneous metal and plastic parts.
8. Use of biodiesel for backup generators and boilers.

GOAL: Reduce air pollutants from training without a reduction in training activity

Issue: Military obscurant training (smoke generator and smoke munitions) generates approximately 48 tons of particulate matter annually. A forced reduction in emissions could result in a reduction in important military training. Voluntary methods to reduce pollutants from smoke and obscurants would improve air quality without influencing military training.

GOAL: Reduce stationary source air emissions 85 percent by 2025

Issue: Fort Lewis uses paints (in 13 paint booths) and solvent degreasing tanks (161 identified units installation-wide). There is also one mixing room in the Hazardous Material Control Center (HMCC). These uses result in the annual release of approximately 4.5 tons of volatile organic compounds (VOCs) from the paint booths and 8.5 tons of VOCs from the degreasers, contributing to ground-level ozone formation. Fort Lewis also has 296 boilers, which are the installation's largest source of particulate pollution (approximately 12.1 tons per year).

Sustainable Benefits –

- By promoting use of alternate fuels, we reduce air emissions and improve air quality.
- By reducing air emissions and hazardous air pollutants (HAPs) now, we will reduce regional haze and future health impacts.
- By coordinating with local and regional air quality planning bodies on air quality issues, we can make decisions and commitments ensuring Fort Lewis' interests are represented and protected. Conversely, we also ensure our activities will not have negative impacts on our neighbors.

FORECAST: Due to increasingly stringent EPA rules and regulations, as well as state and regional concerns, Fort Lewis will need to continue reducing its impact on regional air quality. Fort Lewis' training activities, energy production and consumption, transportation, and volatile material use all impact regional air quality. In the long-term, Fort Lewis needs regional air quality to improve so that constraints on training activities (that impact the air) are eliminated, reduced, or, at a minimum, not expanded. Several issues are critical to future air quality-related mission constraints to Fort Lewis, including regional haze, HAPs in painting/coating activities, and population growth.

Energy & Infrastructure Significance:

Reliable, affordable energy is essential to Fort Lewis' continued operation, mission success, and quality of life. As regional population growth continues, this goal may become more and more important and difficult to achieve within the present energy supply system.

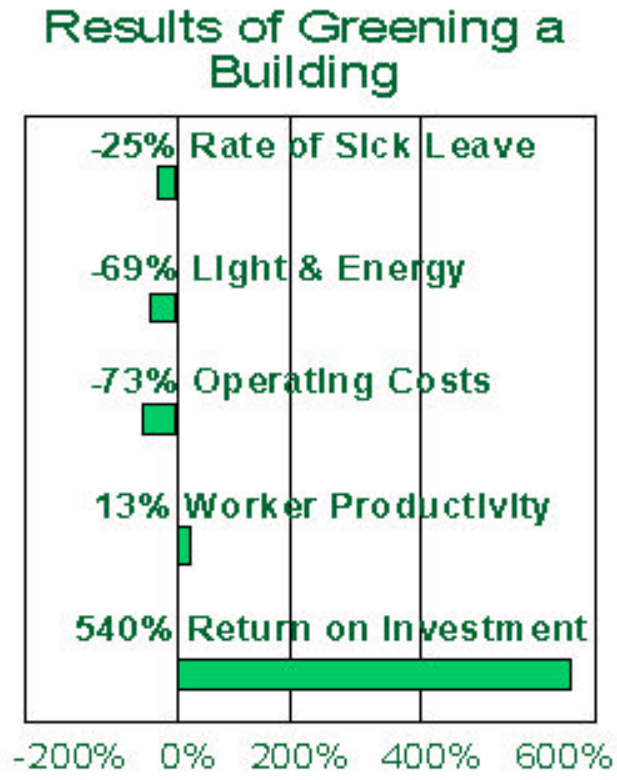
GOAL: Sustain all activities on-post using renewable energy sources and generate all electricity on-post by 2025

Issue: Annual total energy cost has averaged $20 million this past year, which is equal to the generation and release of 280,000 tons of CO_2, 800 tons of NO_x, and 1,800 tons of SO_x. Most likely, regional air quality standards will be more stringent and thus restrict Fort Lewis' ability to complete its mission.

GOAL: All facilities adhere to the LEED platinum standard for sustainable facilities by 2025

Issue: 90% of a building's life-cycle cost is from operation and maintenance. By constructing these buildings in according to a performance standard, such as LEED, the infrastructure on Fort Lewis will significantly reduce its environmental impact, promote greater worker productivity, endure longer, and cost less.

Sustainable Benefits –



Data comes from the David & Lucille Packard Foundation Report & Matrix, site address http://www.packard.org/index.cgi?page=building

Major Tasks by 2007:

1. Encourage innovative use of energy systems by developers.
2. Encourage acceptance and use of innovative energy systems (IES).
3. Reduce energy consumption.
4. Generate 20% energy on-post by FY08, 25% of electricity from renewable sources by FY08.
5. Develop land use criteria to minimize energy use, POV use, paved parking surfaces and impact on natural systems.
6. Develop a baseline LEED rating for all permanent buildings (BSI) by FY04.
7. Establish a gold LEED rating for new construction.
8. Reduce impact to natural features on development/cantonment sites.
9. Plan facilities to reduce infrastructure.
10. Reduce potable water use.
11. Recharge all storm water on-site.
12. Use grey water.
13. Optimize views/aesthetics.
14. Prepare occupants for changes caused by sustainability initiatives.
15. Inform contractors, stakeholders, partners, and local community.
16. Adopt holistic delivery of facilities of systems.

Water Quality Significance:

A clean, safe, and reliable water supply is necessary for the health, safety, and welfare of Fort Lewis personnel, and is thus critical to Fort Lewis' mission capability. Shortages caused by depletion or contamination of a water source could jeopardize the installation's operation.

GOAL: Zero discharge of wastewater by 2025

Issue: Fort Lewis discharges nearly 3 million gallons of treated municipal wastewater to the Puget Sound every day. This water is a resource that should be returned to the aquifer where it can be reused, rather than being discharged as a waste. In addition, by eliminating this discharge, shorelines now closed by regulation can be opened again for shellfish harvest.

GOAL: Reduce Fort Lewis' potable water consumption by 75% by 2025

Issue: As population pressure in the region increases, water has become a precious resource. Some municipalities in the region have been forced to curtail development while they scramble to find new sources. Available supplies, both of groundwater and surface water, are finite and dwindling. Demand for this resource must be aligned with what can be produced in a sustainable manner by pumping and surface water withdrawals.

GOAL: Fort Lewis contributes no pollutants to groundwater and has remediated all contaminated groundwater by 2025

Issue: Past practices at Fort Lewis have resulted in contamination of groundwater by solvents and by leaking storage tanks. In addition, pollutants from non-point sources such as fertilizer and car washing can find their way into surface water bodies. It is necessary to clean up these sites and implement programs to prevent future occurrences.

GOAL: Develop an effective regional aquifer and watershed management program by 2012

Issue: Management of water resources is a regional concern. Aquifers and watersheds know no political or economic boundaries. In order for management of these resources to be effective, it must transcend these boundaries and that means participation in local planning units by all stakeholders, from national agencies to individual property owners. Further, in order to accomplish planning objectives, the results of these efforts must be embraced and incorporated into action plans at local, state, and national levels.

Major Tasks by 2007:

1. Develop two alternatives to wastewater discharge.
2. Reduce potable water consumption by 25%.
3. Replace all eligible underground heating oil tanks on Fort Lewis.
4. Be an active participant in established regional aquifer and watershed planning committees, and integrate planning objectives in existing management plans.

Sustainable Benefits

- By conserving and protecting water resources now, we ensure that sufficient clean water will remain in the future to allow Fort Lewis to execute our mission.
- By eliminating wastewater discharges, we also eliminate the substantial environmental liability involved with the discharge. In addition, removing the discharge would open shellfish beds to harvest that are currently closed, providing economic stimulus for our neighbors and immense political benefit in public and tribal relations.
- By active participation in local and regional planning, Fort Lewis ensures that our interests are represented and protected. Conversely, we ensure that our activities will not have negative impacts on our neighbors. Without representation on local planning committees, ordinances, laws, and regulations could be promulgated that could have negative impacts on our mission and our ability to continue that mission into the future.

Training Lands Significance:

Training constraints, which can degrade readiness, are often imposed to prevent or minimize impacts to threatened and endangered species, cultural resources, people, air quality, and water resources. Noise, dust, exhaust, and smoke from live fire exercises, aviation operations, and other military training potentially impact Fort Lewis' residents and the surrounding communities.

GOAL: Attain healthy, resilient Fort Lewis and regional lands that support training, ecosystem, cultural, and economic values by 2025

Issue: Fort Lewis' training areas cover approximately 75,000 acres, and consist of ranges, impact areas, major drop zones, tank trails, and maneuver areas as well as our natural and cultural resources. Fort Lewis' training areas are used 325 training days/year by over 200 military units. Proper management of existing training lands is imperative to the continued level of readiness at Fort Lewis and to not endanger the quality of life for our local communities.

GOAL: Recover all listed and candidate federal species in South Puget Sound region

Issue: Federal regulators have repeatedly recognized the installation's proactive role in management of listed species and their habitats, such as the bald eagle, water howellia, and the northern spotted owl. The Installation Sustainability Program aims to protect military operations, candidate and listed species, and their associated habitats.

Major Tasks by 2007:

1. Agree on language to be used and define natural resource conditions with Regional Partners.
2. Analyze training requirements on and off the Installation.
3. Identify sites that may be eligible for inclusion on the National Register of Historic Places. Identify historic cemeteries. Recognize traditional cultural places.
4. Identify and acquire three sites in regional proximity to installation to reduce encroachment, maintain training capability, and promote natural resource conservation.
5. Using existing management plans, coordinate, and implement an integrated prairie and oak woodland management program.
6. Identify existing populations of Federal and State listed and candidate species in the region and identify causal factors for their decline.
7. Stabilize current populations of federal listed and candidate species on Fort Lewis.
8. Determine impacts and means of augmentation of existing populations and establishment of new populations of Federal and State listed and candidate species in the region.

Sustainable Benefits –

- Evaluating the eligibility of potential historic properties for listing in the National Register of Historic Places will remove unnecessary training restrictions.
- Integrating the management of prairies and oak woodlands maximizes environmental benefits for dollars spent and minimizes conflict between training and resources protection.
- Acquiring development buffers results in fewer people living adjacent to the installation boundaries, thus allowing for continues training with less direct impacts to our neighbors.
- Acquiring conservation buffers for habitat preservation enhances populations of listed or candidate species and reduces training restrictions.

Products and Materials Significance:

The need to manage products, materials, and wastes on Fort Lewis results in significant labor and budgetary demands. Additionally, the proper management of hazardous materials and wastes requires soldier time that could otherwise be spent on mission-related tasks. These materials and wastes also affect the health and safety of Fort Lewis personnel and could potentially contaminate resources such as the sole source aquifer, regional air supply, and training lands.

GOAL: Cycle all material use to achieve zero net waste by 2025

Issue: Fort Lewis purchased over $100 million dollars worth of materials in FY00. The use of products and materials creates over 58,100 tons of waste annually. In addition, Fort Lewis transported 29,500 tons over 300 miles to a landfill in Oregon. Solid and hazardous waste transportation and disposal cost $1.16 million in FY01, and resulted in the emission of approximately 400 tons of CO_2, 10 tons of CO, and 15 tons of NO_X to the atmosphere from the long-haul trucks.

Major Tasks by 2007:

1. Change procurement practices to introduce only cyclable materials to Fort Lewis
2. Achieve 100% cradle-to-grave HAZMAT
3. Achieve a 40% reduction in waste stream leaving Fort Lewis

Sustainable Benefits –

Acquisition planning and solid waste management are the keys to reaching zero net waste generation by the year 2025. We will change the Fort Lewis acquisition culture to plan for disposal during acquisition planning; we will incentivize leasing vs. buying; we will create a culture where purchasing items containing post-consumer recycled content is worth paying for, and we will partner with our solid waste contractor to monitor and adjust our progress until we achieve our goal. In this way, we will not only improve the reutilization of materials at Fort Lewis, but we will demonstrate to our neighbors in the South Puget Sound community that we are committed to a cleaner and more efficient future for the region that we share.

Installation Sustainability Program Looks Ahead to 2004 –

During 2003, the Sustainability Team will continue to work and build toward "irreversible momentum" – that synergy of collective initiatives and progress, of our commitment and achievements. By 2004, we hope to:

- Offer CNG, E85, and B20 alternative fuels stations, reducing the amount of gasoline used, resulting in a reduction of air emissions.
- See a pilot program that will assist in expanding LEED ratings to existing building.
- Analyze data from completed studies in all goals to direct our future steps.
- Fully convert from wet wash/standard dry cleaning to new CO2 process, eliminating chemical and water use while extending life of clothing items, working towards zero net waste generation.
- Reduce solid waste by 25% through increased recycling efforts.
- Purchase land adjacent to Fort Lewis and elsewhere to conserve species and habitats, prevent incompatible development, and offer additional military training opportunities.
- Obtain Department of Army statement that projects supporting sustainability goals and objectives will be funded and execute using standard Army systems.
- Integrate the Installation Sustainability Program, ISO 14001 EMS, and the Balanced Scorecard/Strategic Readiness system.